Work Order ID 105780 *105780*

August-19-13 11:23:34 AM

Item ID: D3646-2 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Arm **Stop** *NS2*

Start Date: 8/19/13 **Start Qty:** 6.00 *6* **Cust Item ID:**

Required Date: 9/03/13 **Req'd Qty:** 6.00 *6* **Customer:**

Reference:

Approvals: **Process Plan:** MLS **Date:** 13-08-19 **Tooling:** ____ **Date:** ____ **Run Start** *NR1*

QC: ____ **Date:** ____ **SPC (Y/N):** ____ **Date:** ____ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100 *100* Brake NC / Brake NC	NC BRAKE	0.00				6	SAD	13-10-28	
	Memo: 1-Punch to length as per Dwg D3646 & template DT8958 / 24.8	0.00							
110 *110* Small Fab / Small Fab	Small Fab	0.00				6	SAD	13-10-26	
	Memo: 1-Deburr	0.00							
120 *120* QC / Quality Control	QC5- Inspect part completeness to step on W/O	0.00 DAS 27 9-89				6			
	Memo	0.00 13 10 29							

Draw Nbr	Revision Nbr
D3646	C

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ________	DISPOSITION	AGAINST DEPARTMENT/PROCESS
Part No. ________	Rework ☐	Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
NCR No. ________	Scrap ☐	Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
	Use-as-is ☐	Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
	Work Order Update ☐	Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 105780
August-19-13 11:23:34 AM

105780

Item ID:	D3646-2		**Accept** *N900040100*	**Setup Start**	*NS1*
Revision ID:				**Stop**	*NS2*
Item Name:	Arm				
Start Date:	8/19/13	**Start Qty:** 6.00 *6*	**Cust Item ID:**		
Required Date:	9/03/13	**Req'd Qty:** 6.00 *6*	**Customer:**		
Reference:					

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________ **Run Start** *NR1*

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Powdercoat Powder Coating	Black Sandtex(Ref:4.3.5.7) per QSI005 4.3 M117338. Memo START TIME: 2:15 OVEN TEMPERATURE: 300° FINISH TIME: 2:45	0.00 0.00				6	ϕ	13-10-29	DAS 34 9-89
140 *140* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00	DAS 27 9-89 13 10 30			6			
150 *150* Packaging Packaging	Identify as per dwg & Stock Location: ST227 Memo	0.00 0.00				6X	DAS 28 9-89	13-10-30	

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________________

Part No. ____________________

NCR No. ____________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 105780
August-19-13 11:23:34 AM

105780

Item ID: D3646-2
Revision ID:
Item Name: Arm
Start Date: 8/19/13 **Start Qty:** 6.00 *6*
Required Date: 9/03/13 **Req'd Qty:** 6.00 *6*
Reference:

Accept *N900040100*

Cust Item ID:
Customer:

Setup **Start** *NS1*
Stop *NS2*

Run **Start** *NR1*
Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________
QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 *160* QC Quality Control	QC21- Final Inspection - Work Order Release	0.00							
	Memo	0.00							

13-10-31
MF
13-10-30

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________	**DISPOSITION**	**AGAINST DEPARTMENT/PROCESS**			
Part No. ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	**General**			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ____________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		____________
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		____________
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		____________
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		____________

Picklist Print

August-19-13 11:23:38 AM

Work Order ID: 105780 *105780*

Parent Item: D3646-2 *D3646-2*

Parent Item Name: Arm

Start Date: 8/19/13 **Required Date:** 9/03/13

Start Qty: 6.00 **Required Qty:** 6.00

Comments: IPP revA 11.07.12 new issue EC verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304TR0.500W.035		Purchased	No			100	f	485.0001	2.11	13.32632			
M304TR0.500W.035 304 RD Tube .500 x .035W									**	5/40	13-10-28		

Location	Loc Qty	Loc Code	
MAT017	485.00013		
118702	0.00003		
123303	138.9645		
125513	346.0356		
126922			13.3264

DQA: ________ Date: ________________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

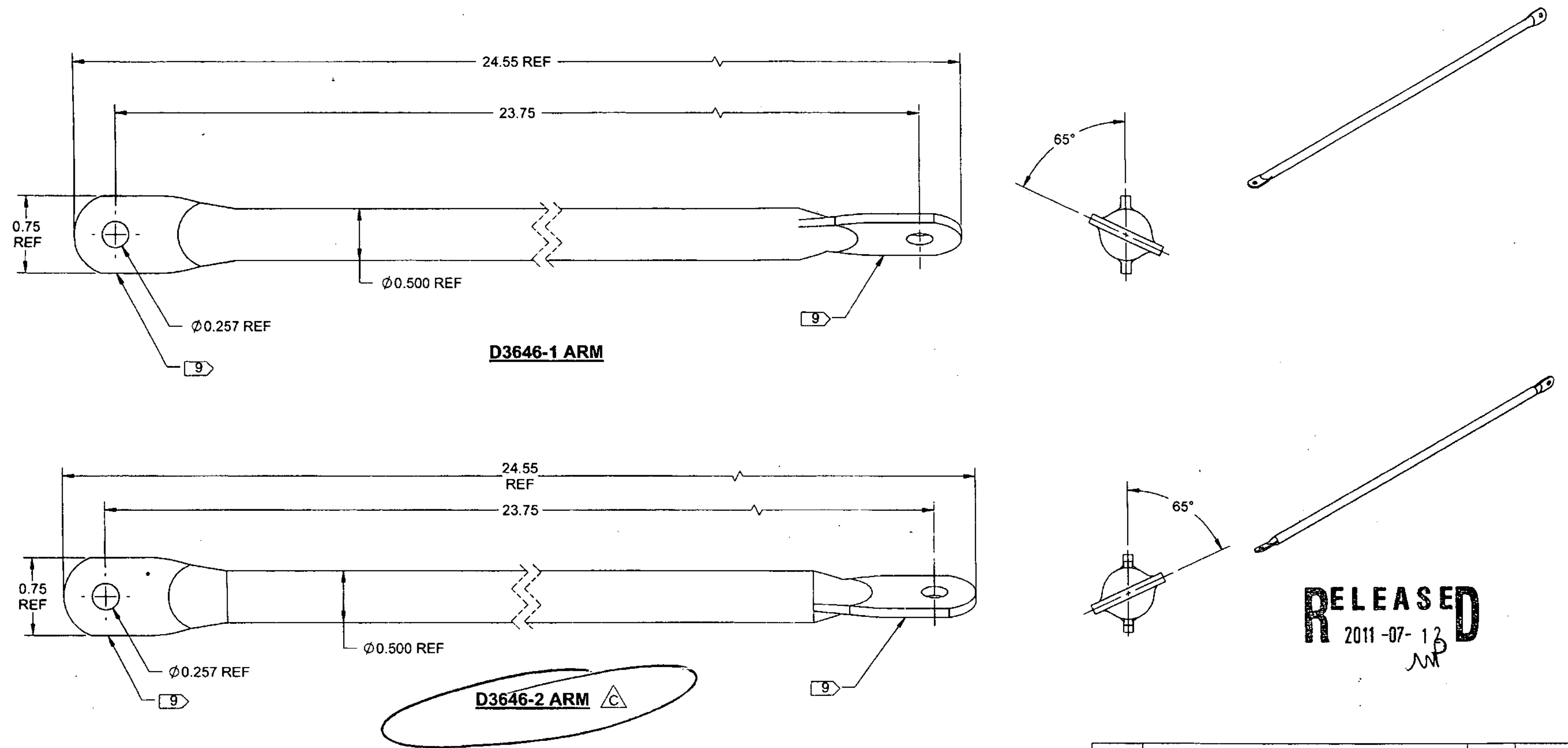
QA Closed: Date:

Work Order: ______ Part No. ______ NCR No. ______	**DISPOSITION** Rework ☐ Scrap ☐ Use-as-is ☐ Work Order Update ☐	**AGAINST DEPARTMENT/PROCESS** Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	☐									
Equip/Tooling	☐									
Operator	☐									
Material	☐									
Setup	☐									
Other	☐									
Process	☐									
Supplier	☐									
Training	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		



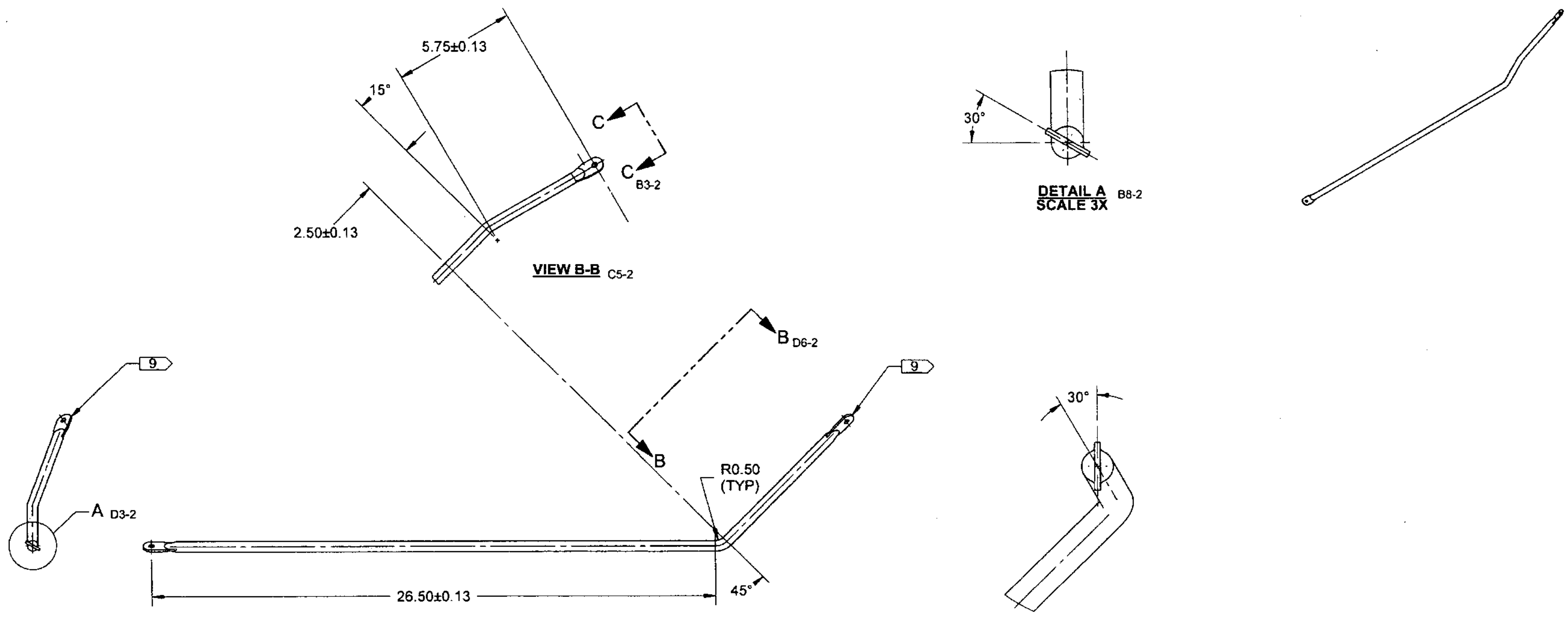
REV.	DESCRIPTION	BY	DATE
C	ADD-2 & -4 FOR LHS INSTALLATION. DELETE REFERENCES TO TEMPLATES (NOTE 8) PER SHOP REQUEST.	AJS	11.07.11
B	REFORMAT DWG, ANGLE 65° WAS 45° (ZN C3-1), ADD IDENTIFICATION TAG (ZN A8-1, A8-2)	CP	09.06.04
A	NEW ISSUE	MB	07.06.06

NOTES:
1) MATERIAL: AISI 304/316 SS TUBE ⌀0.500 X 0.035 WALL PER ASTM A213/A269 OR ASME A213 (REF DART SPEC. M304TR0500W.035)
2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3646-X" AND B/N "BXXXXX" PER DART QSI 044 6.1 USING REMOVABLE TAG
7) WEIGHT: 0.38 lbs
8) DELETED AT REV. C (C)
9) PUNCH BOTH ENDS PER SPEC CONTROL DWG D2727

105780 MLJ
13-08-19

DESIGN	MB	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	[signature]	DRAWING NO. D3646	REV. C SHEET 1 OF 3
MFG. APPR.	[signature]		
APPROVED	[signature]	TITLE ARM	SCALE NTS
DE APPR.	[signature]		
DATE	11.07.11		

105780



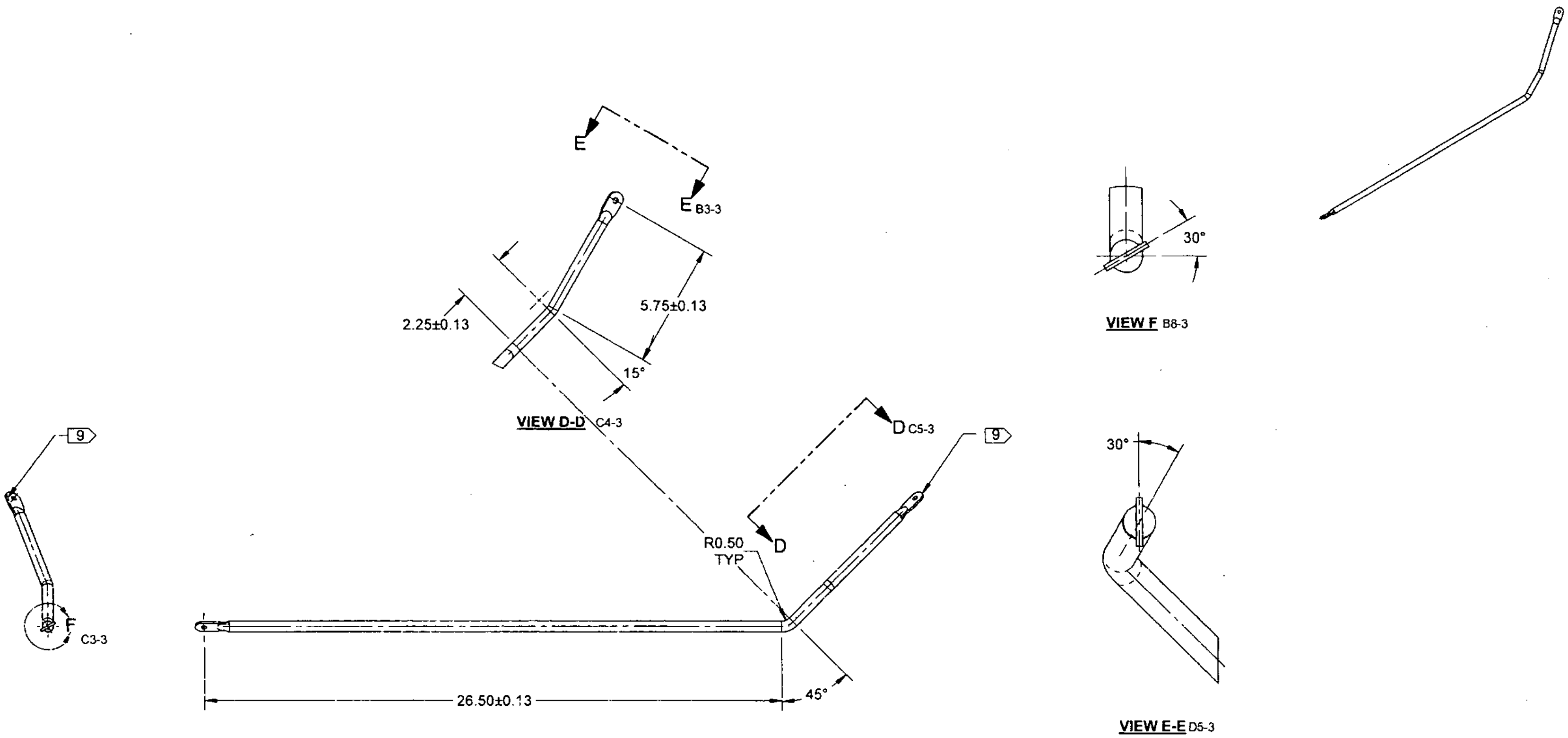
D3646-3 ARM

RELEASED 2011-07-13

NOTES:
1) MATERIAL: AISI 304/316 SS TUBE Ø0.500 X 0.035 WALL PER ASTM A213/A269 OR ASME A213
(REF DART SPEC. M304TR0500W.035)
2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3646-3" AND B/N "BXXXXX"
PER DART QSI 044 6.1 USING REMOVABLE TAG
7) WEIGHT: 0.57 lbs
8) DELETED AT REV C. (C)
9) PUNCH BOTH ENDS PER SPEC CONTROL DWG D2727

DESIGN	MB	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED	[signature]	DRAWING NO. D3646 — REV. C — SHEET 2 OF 3
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE ARM — SCALE NTS
DE APPR.	[signature]	
DATE	11.07.11	

105780



D3646-4 ARM

RELEASED
2011-07-12

NOTES:
1) MATERIAL: AISI 304/316 SS TUBE ⌀0.500 X 0.035 WALL. PER ASTM A213/A269 OR ASME A213
(REF DART SPEC. M304TR0500W.035)
2) FINISH: POWDER COAT "BLACK SANDTEX" (4.3.5.7) PER DART QSI 005 4.3
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3646-4" AND B/N "BXXXXX"
PER DART QSI 044 6.1 USING REMOVABLE TAG
7) WEIGHT: 0.57 lbs
8) DELETED AT REV C. (C)
9) PUNCH BOTH ENDS PER SPEC CONTROL DWG D2727

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	AJS	
CHECKED	[signature]	DRAWING NO. D3646 — REV. C — SHEET 3 OF 3
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE ARM — SCALE NTS
DE APPR.	[signature]	
DATE	11.07.11	

DART AEROSPACE LTD

Description: ARM		Work Order: 105 780
Inspection Drawing: D3646-2	Rev: C	Part Number: D3646-2

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
23.75	+/- 0.030	23.75	✓		M-T	SAD-1
24.55	+/- 0.030	24.55	✓		M-T	SAD-1
.750	+/- 0.030	.75	✓		M-T	SAD-1
Ø0.257	+0.006 -0.001	0.257	✓		Vern	SFab-03
65°	+/- ½°	65°			Angle level	SFab-05

Measured by: SAD	Checked By: DAS 30 9-89	QC inspector:	Engineering Approval (*if necessary*):
Date 13-10-29	Date 13-10-29	Date	Date